

GALILEO'S EXPLORATION OF IO

COSPAR 2000
Warsaw, Poland July 17-22, 2000

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Galileo Background

- Current spacecraft position
- Io encounters – I0, I24, I25 and I27

Io: Science Objectives

- Io volcanic activity
- Io magnetic field and magnetosphere interaction
- Io atmosphere

I0

- I0 encounter particles and fields only
- Plasma interactions – ion-cyclotron waves
- Magnetic field perturbation – internal or current driven?
- Field aligned currents and auroral processes

I24

- Spacecraft safing event – memory cell failure – sequence recovered
- First hi-resolution Io images
- Pele caldera night side pix – lava lake
- Prometheus vent system

I25

- Spacecraft safing – ripple effect from I24 event
- S-polar pass science lost
- Recovered post C/A data
- Spectacular view of Tvashtar eruption
 - Eruption temperatures
 - SO₂ sapping

I27

- Encounter totally successful – learned from previous problems
- Re-look at Tvashtar – confirmation of eruption topology reconstruction
- Latest hi-res images of Prometheus vent region
- Discussion of Prometheus eruption mechanics and history

Io – Future Galileo Plans

- GMM trajectory options beyond Dec. 2000
- Io encounter possibilities